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EXAMINER	
SHAH, CHIRAG G	
ART UNIT	**PAPER NUMBER**
2664	

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/780,741	BEACH, ROBERT	
	Examiner	Art Unit	
	Chirag G. Shah	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-45 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 15, 18, 19, 23, 27, 31, and 33 rejected under 35 U.S.C. 102(e) as being anticipated by Mahany (U.S. Patent No. 6,665,536).

Regarding claims 1, Mahany discloses in **figs. 1, 3 and in col. 4, lines 39-65** of a method for operating: a multiple overlapping wireless local area subnetworks **[two wireless adapter able to communicate with multiple networks, see col. 4, lines 39-65]**, the method comprising:

providing a common cell controller **[CPU Processor 41, fig. 3]** coupled to a plurality of RF ports **[two wireless radios 42, 43, fig. 3]**, wherein the common cell controller **[CPU Processor 41, fig. 3]** in conjunction with each RF port **[two wireless radios 42, 43, fig. 3]**, provides wireless medium access to all of the wireless local area subnetworks for mobile units in

a designated area associated with the RF port **[each wireless radio supports and provides a medium access to all of the wireless local area subnetworks for mobile units, see figs. 3, 7a, 9 and 10]**, wherein each RF port **[radio port 42, 43 see, fig. 3]** is configured to perform low level medium access control (MAC) functions **[see col. 4, lines 39-65, MAC processor controls low level protocol functions]** and the cell controller **[CPU Processor 41, fig. 3]** is configured to perform high level MAC functions for the coupled plurality of RF ports **[see col. 4, lines 39-65, CPU processor controls the high-level communications protocol functions]**;

using the cell controller **[CPU Processor 41, fig. 3]** to provide multiple service set identifications through each RF port **[each radio includes an identification, see fig. 3]**, wherein each service set identification is associated with a corresponding wireless subnetwork **[each wireless radio is associated with a corresponding wireless subnetwork, see figs. 9 and 10]**, wherein said RF ports are operated to perform low level MAC functions **[see col. 4, lines 39-65, MAC processor controls low level protocol functions]** and to relay signals received from mobile units to said cell controller and to relay signals received from the cell controller to said mobile units **[see, col. 5, lines 5-30 and to col. 4, lines 39-65]**, and

wherein said cell controller **[CPU Processor 41, fig. 3]** is operated to control association of said mobile units **[mobile units of fig. 9 and 10]** with said RF port **[radio port 42, 43 see, fig. 3]**, including sending and receiving association signals between said RF port and said cell controller, said association of said mobile units utilizing at least two wireless local area networks occupying common physical space **[see, col. 5, lines 5-30 and to col. 4, lines 39-65 and fig. 3] as claim**.

Regarding claim 15, Mahany discloses in fig. 3 and in col. 4, lines 39-65 of a method for transmitting signals having a wireless signal format using an RF port [two wireless radios 42, 43, fig. 3, the RF port [two wireless radios 42, 43, fig. 3] having an Ethernet interface [see fig. 11] whereby the RF port is coupled to a wired network [fig. 33, LAN 33], and having a data processor and an RF module [see fig. 3 and 11], wherein the RF port is configured to perform low level MAC functions [see col. 4, lines 39-65], and wherein the wired network comprises at least one of a physical entity and a logical entity to perform high level MAC functions [see fig. 3, 9-11 and col. 4, lines 39-65], the method comprising:

providing an Ethernet data packet formatted according to high level MAC functions over the wired network to said Ethernet interface, said Ethernet data packet encapsulating as data a data message having said wireless signal format according to high level MAC functions on said wired network [see fig. 3 and 9-11, col. 4, lines 39-65]

operating said data processor to provide said data message to said RF module [see fig. 3, col. 4, lines 39-65, CPU processor provides data message to radio for transmission];

operating said RF module to transmit said data message as an RF signal to a mobile unit [see fig. 3 and 9-11, col. 4, lines 39-65, RF radio card transmits data to mobile unit]; and

operating said RF module to transmit said data message as an RF signal over at least two wireless local area networks occupying common physical space [see fig. 3, col. 4, lines 39-65, 42 and 43 radio cards occupying common physical space].

Regarding claim 18, Mahany discloses in figs. 3 and 9-11 and in col. 4, lines 39-65 a method for receiving signals having a wireless signal format including wireless address data and

message data at an RF port, the RF port having a wired network interface whereby the RF port is coupled to a wired network, and having a data processor and an RF module, wherein the RF port is configured to perform low level MAC functions and the wired network is configured to perform high level MAC functions, the method comprising:

operating said RF module to receive RF signals from at least two wireless local area subnetworks occupying common physical space having said wireless signal format [see fig. 3 and col. 4, lines 39-65];

operating said data processor to receive wireless data signals form said RF module and provide data signals to said wired network interface comprising a data packet having a source address corresponding to said RF port formatted according to high level MAC functions on said wired network, said data packet including said wireless address data and said message data [see col. 4, lines 39-65].

Regarding claim 19, Mahany discloses in figs. 3 and 9-11 and in col. 4, lines 39-65 a method for receiving RF message signals having a wireless signal format including an address data format and message data using an RF port, the RF port having an Ethernet interface whereby the RF port is coupled to a wired network, and having a data processor and an RF module, wherein the RF port is configured to perform low level MAC functions and the wired network is configured to perform high level MAC functions, the method comprising:

receiving said RF message signals in said RF module from at least two wireless local area subnetworks occupying common physical space [see fig. 3 and col. 4, lines 39-65];;

providing said signals as data signals to said data processor; operating said data processor to interpret address data in said data signals [see fig. 3 and col. 4, lines 39-65];; and,

in dependence on said address data, encapsulating said message data and address data in an Ethernet packet and providing said Ethernet packet to said Ethernet interface for transmission on said wired network according to high level MAC functions in figs. 9-11, 3 and in col. 4, lines 39-65].

Regarding claim 23, Mahany discloses in fig. 3 and 9-11 of a simplified wireless local area network system comprising:

a computer having a data processor and a memory [see fig. 3, CPU processor, which inherently includes a memory];

a plurality of RF ports [Radio 42 and 43, fig. 3], each RF port having an RF port data processor [MAC processor, see fig. 3], an RF module and a data communications interface coupled to said computer [see fig. 3, MAC processor coupled to the CPU processor];

a first program in said memory of said computer for operating said computer data processor to perform high level MAC functions for said plurality of RF ports, said functions including association with mobile units via at least two wireless local area subnetworks occupying common physical space [see col. 4, lines 39-65]; and

a second program for operating said RF port data processor to perform low-level MAC functions [see col. 4, lines 39-65].

Regarding claim 27, Mahany discloses in fig. 3 and col. 4, lines 39-65 of a wireless access device for providing wireless access to a communication system, comprising: a modem [PCMCIA Radio card 42 and 43, see fig. 3] for sending and receiving data messages between said communications system and an RF port [see fig. 3], the RF port [PCMCIA Radio card 42 and 43, see fig. 3] comprising a data interface coupled to said modem [see fig. 3], a data processor and an RF module, said data processor being programmed to receive data messages from said modem, to format said messages for wireless data communications and to provide said formatted messages to said RF module for transmission by RF data signals to at least one mobile unit via at least two wireless local area subnetworks occupying common physical space [see col. 4, lines 39-65] , and to receive RF data signals from said at least one mobile unit via at least two wireless local area subnetworks occupying common physical space [see col. 4, lines 39-65], and to provide data messages to said modem to be sent on said communications system, wherein said RF port performs low level MAC functions and said communication system performs high level MAC functions [see col. 4, lines 39-65].

Regarding claim 31, Mahany discloses in figs. 9-11 of a method for providing wireless access to the Internet, comprising:

providing a modem coupled to the Internet and having a data communications interface connected to an RF port [see figs. 3 and 9-11, modem radio card interface RF port, accessing outside/Internet]

configuring said RF port for wireless data communication to a mobile unit having a predetermined wireless communications address [each RF port is inherently configured with an IP address to distinguish one network from another], and

providing at least one mobile unit configured with said predetermined wireless communications address for conducting RF data communications with said RF port via at least tow wireless local area subnetworks occupying common physical space, said RF port being arranged to relay communications between said mobile unit and said modem, wherein said RF port performs low level MAC functions and said Internet performs high level MAC functions [see col. 4, lines 39-65].

Regarding claim 33, Mahany discloses in fig. 1, 3, 9-11 and col. 4, lines 39-65 of a system for providing wireless data communications between mobile units and a wired network operating according to a wireless data communications protocol having high level MAC functions including association and roaming functions, comprising:

at least one RF port performing lower level MAC functions [see fig. 3 and col. 4, lines 39-65], said at least one RF port having an RF module for sending and receiving data messages to said at least one mobile unit using capable of operating via at least two wireless local area subnetworks occupying common physical space [see, fig. 3 and 9-11], having a wired interface [LAN, fig. 3] for sending and receiving data messages to and from said wired network using a wired communications protocol, and a programmed processor for relaying data messages received on said wired interface using said RF communications protocol and for relaying data

messages received by said RF module using said wired communications protocol [see fig. 3, 9-11]; and

at least one controller [CPU controller, fig. 3] for sending data messages to said wired interface of said RF port and for receiving data messages from said RF port wherein said cell controller performs said high level MAC functions [see col. 4, lines 39-65].

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-6, 15, 17-20, 22-24, 26, 27, and 31-45 rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis (U.S. Patent No. 6,259,898) in view of Mahany (U.S. Patent No. 6,665,536).

Referring to claim 1, Lewis discloses in the **abstract, figures 1 and 2** of a method for operating a wireless local area network having at least one RF port **(each access point 19 includes a plurality of wireless transceivers 36a and 36b as in figure 2)**, a plurality of mobile units **(21a thru 21d as in figure 1)** and a cell controller **(main processor 30 as in figure 2)** coupled to said RF port **(transceivers 36a and 36b as in figure 2)**, comprising:

operating said RF port to relay signals received from mobile units to said cell controller and to relay signals received from said cell controller to said mobile units **(As disclosed in figures 1, 2 and column 4, lines 47 to column 5, lines 25, RF transceivers 36, includes its**

own respective receiver 38 for receiving wireless RF communication from a mobile terminal 21 and a wireless transmitter 40 for transmitting wireless RF communications to a mobile terminal 21. In addition, information packets received via the transceivers 36a, 36b are communicated/rely to the main processor 30.)

operating said cell controller to control association of said mobile units with said RF port, including sending and receiving association signals between said RF port and said cell controller, said association of said mobile units utilizing at least two wireless local area subnetworks occupying common physical space **(As disclosed in figures 1, 2, and column 4, lines 47 to column 5, lines 62, Information packets which are received by the main processor 30 are reviewed by the processor 30 to determine if the information packets are directed to a mobile terminal 21 registered to the access point 19. In addition, in order to permit simultaneous operation of the transceivers 36 included in a given access point, each transceiver 36a, 36b is configured to operate on a different channel, access point 19 may include two or more peripheral ports for PCMCIA card radio. Furthermore, as in figures 1 and 2 and in column 2, lines 23 to 42 and column 5, lines 26-45 each transceiver 36a, 36b operate on different communication channels in order to avoid interference, yet the two PCMCIA radio transceivers occupy common physical space since a mobile station in the same geographic area is able to respond to a beacon sent out by the transceivers in a specific operating channel).**

operating said cell controller to send messages to and from said mobile unit via said RF port **(As disclosed in figures 1, 2 and column 4, lines 47 to column 5, lines 25, RF transceivers 36, includes its own respective receiver 38 for receiving wireless RF**

communication from a mobile terminal 21 and a wireless transmitter 40 for transmitting wireless RF communications to a mobile terminal 21. In addition, the transceivers 36a, 36b are coupled to the main processor 30 via a local bus 46 and information packets received via the transceivers 36a, 36b are communicated/rely to the main processor 30) as claim.

Referring to claims 15, **Lewis discloses in the abstract, figures 1 and 2 of** a method for transmitting signals having a wireless signals format using an RF port having an Ethernet interface **(Each Access Point 19 includes a plurality of wireless transceivers, the Network Interface Card attached via a port to the Access Point is an Ethernet network interface card or a PCMCIA radio card as in figure 2 and column 5, lines 53-62)**, a data processor **(main processor 30 as in figure 2)** and an RF module **(Access Point 19 of figure 2)**, comprising providing an Ethernet data packet to said Ethernet interface **(Network Interface Card such as PCMCIA as in column 5, lines 53-62)**, said Ethernet data packet encapsulating as data a data message having said wireless signal format, operating said data processor to provide said data message to said RF module, and operating said RF module to transmit said data message as an RF signal over at least two wireless local area subnetworks **(as disclosed in the abstract that access point includes at two transceivers one communicating with one group of mobile terminals on one channel and another transceiver communicating to another different group of terminals on a second/separate channel)** occupying common physical space **(As disclosed in column 4, lines 47 to column 5, lines 62, the transceivers 36a, 36b are coupled to the main processor 30 via a local bus 46. Information (Ethernet) packets are received via the transceivers 36a, 36b (Ethernet Interface/NIC/PCMCIA), intended to be forwarded onto the system backbone 17, are communicated to the main processor 30. The main**

processor forwards each packet onto the system backbone 17 to the address specified in the packet, the processor 30 receives a look-up table in the memory to determine if the mobile terminal 21 to which the packet is address is registered, if so, the processor determines from which particular transceiver 36a or 36b is assigned to communicating with particular mobile terminal 21 to which the packet is addressed. Based on such determination, the processor 30 forwards the received packet to the processor of the appropriate Ethernet interface (of the at least two wireless local area subnetwork occupying common physical space). *Lewis fails to explicitly disclose of providing a common cell controller coupled to a plurality of RF ports, wherein each RF port is configured to perform low level medium access control (MAC) functions and the cell controller is configured to perform high level MAC functions for the coupled plurality of RF ports.* Mahany discloses in **figs. 1, 3 and in col. 4, lines 39-65** of a method for operating: a multiple overlapping wireless local area subnetworks **[two wireless adapter able to communicate with multiple networks, see col. 4, lines 39-65]**, the method comprising:

providing a common cell controller **[CPU Processor 41, fig. 3]** coupled to a plurality of RF ports **[two wireless radios 42, 43, fig. 3]**, wherein the common cell controller **[CPU Processor 41, fig. 3]** in conjunction with each RF port **[two wireless radios 42, 43, fig. 3]**, provides wireless medium access to all of the wireless local area subnetworks for mobile units in a designated area associated with the RF port **[each wireless radio supports and provides a medium access to all of the wireless local area subnetworks for mobile units, see figs. 3, 7a, 9 and 10]**, wherein each RF port **[radio port 42, 43 see, fig. 3]** is configured to perform low level medium access control (MAC) functions **[see col. 4, lines 39-65, MAC processor controls**

low level protocol functions] and the cell controller **[CPU Processor 41, fig. 3]** is configured to perform high level MAC functions for the coupled plurality of RF ports **[see col. 4, lines 39-65, CPU processor controls the high-level communications protocol functions]**;

using the cell controller **[CPU Processor 41, fig. 3]** to provide multiple service set identifications through each RF port **[each radio includes an identification, see fig. 3]**, wherein each service set identification is associated with a corresponding wireless subnetwork **[each wireless radio is associated with a corresponding wireless subnetwork, see figs. 9 and 10]**, wherein said RF ports are operated to perform low level MAC functions **[see col. 4, lines 39-65, MAC processor controls low level protocol functions]** and to relay signals received from mobile units to said cell controller and to relay signals received from the cell controller to said mobile units **[see, col. 5, lines 5-30 and to col. 4, lines 39-65]**, and

wherein said cell controller **[CPU Processor 41, fig. 3]** is operated to control association of said mobile units **[mobile units of fig. 9 and 10]** with said RF port **[radio port 42, 43 see, fig. 3]**, including sending and receiving association signals between said RF port and said cell controller, said association of said mobile units utilizing at least two wireless local area networks occupying common physical space **[see, col. 5, lines 5-30 and to col. 4, lines 39-65 and fig. 3]**. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Lewis to include the teachings of low-level MAC functionality by a MAC controller and high-level functionality by a cell processor as taught by Mahany. One is motivated as such in order to increase the transmission capacity available on the infrastructure.

Referring to claim 18, Lewis discloses in the **abstract, figures 1 and 2 and in column 4, lines 47 to column 5, lines 62** of a method for receiving signals having a wireless signal format including wireless address data and message data at an RF port having a wired network interface 32 a data processor (**main processor 30**) and an RF module (**Access Point**), comprising

operating said RF module (Access Point) to receive RF signals from at least two wireless local area subnetworks (36a, 36b transceivers) occupying common physical space having said wireless signal format **(as disclosed in figures1, 2, and column 4, liens 47 to column 5, lines 62, Access Point receives simultaneous RF signals from transceivers 36a, 36b, each transceiver is configured to operate on a different communication channel occupying common physical space)** ,

operating said data processor **(main processor 30)** to receive wireless data signals from said RF module and provide data signals to said wired network interface **(as disclosed in figure 2 and column 4, lines 20-38, the main processor 30 is coupled to the system backbone 17 by way of a network interface 32. the network interface 32 permits the main processor 30 to send an d receive data packets via the wired system backbone 17)** comprising

a data packet having a source address corresponding to said RF port using a protocol for said wired network, said data packet including said wireless address data and said message data **(as disclosed in column 4, lines 47 to column 5, lines 25, information packets which are received via the transceivers 36a, 36b are communicated to the main processor 30; the main processor 30 then forwards each packet on the system backbone 17 to the address specified in the packet. Information packets, which are received by the main processor 30**

from the system backbone, are reviewed by the processor 30 to determine if the information packets are directed to a mobile terminal 21 registered to the access point 19. The processor 30 receives a look-up table in the memory to determine if the mobile terminal 21 to which the packet is address is registered, if so, the processor determines from which particular transceiver 36a or 36b is assigned to communicating with particular mobile terminal 21 to which the packet is addressed. Based on such determination, the processor 30 forwards the received packet to the processor of the appropriate Ethernet interface) as claim. *Lewis fails to explicitly disclose of providing a common cell controller coupled to a plurality of RF ports, wherein each RF port is configured to perform low level medium access control (MAC) functions and the cell controller is configured to perform high level MAC functions for the coupled plurality of RF ports.* Mahany discloses in **figs. 1, 3 and in col. 4, lines 39-65** of a method for operating: a multiple overlapping wireless local area subnetworks **[two wireless adapter able to communicate with multiple networks, see col. 4, lines 39-65]**, the method comprising:

providing a common cell controller **[CPU Processor 41, fig. 3]** coupled to a plurality of RF ports **[two wireless radios 42, 43, fig. 3]**, wherein the common cell controller **[CPU Processor 41, fig. 3]** in conjunction with each RF port **[two wireless radios 42, 43, fig. 3]**, provides wireless medium access to all of the wireless local area subnetworks for mobile units in a designated area associated with the RF port **[each wireless radio supports and provides a medium access to all of the wireless local area subnetworks for mobile units, see figs. 3, 7a, 9 and 10]**, wherein each RF port **[radio port 42, 43 see, fig. 3]** is configured to perform low level medium access control (MAC) functions **[see col. 4, lines 39-65, MAC processor controls**

low level protocol functions] and the cell controller **[CPU Processor 41, fig. 3]** is configured to perform high level MAC functions for the coupled plurality of RF ports **[see col. 4, lines 39-65, CPU processor controls the high-level communications protocol functions]**;

using the cell controller **[CPU Processor 41, fig. 3]** to provide multiple service set identifications through each RF port **[each radio includes an identification, see fig. 3]**, wherein each service set identification is associated with a corresponding wireless subnetwork **[each wireless radio is associated with a corresponding wireless subnetwork, see figs. 9 and 10]**, wherein said RF ports are operated to perform low level MAC functions **[see col. 4, lines 39-65, MAC processor controls low level protocol functions]** and to relay signals received from mobile units to said cell controller and to relay signals received from the cell controller to said mobile units **[see, col. 5, lines 5-30 and to col. 4, lines 39-65]**, and

wherein said cell controller **[CPU Processor 41, fig. 3]** is operated to control association of said mobile units **[mobile units of fig. 9 and 10]** with said RF port **[radio port 42, 43 see, fig. 3]**, including sending and receiving association signals between said RF port and said cell controller, said association of said mobile units utilizing at least two wireless local area networks occupying common physical space **[see, col. 5, lines 5-30 and to col. 4, lines 39-65 and fig. 3]**. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Lewis to include the teachings of low-level MAC functionality by a MAC controller and high-level functionality by a cell processor as taught by Mahany. One is motivated as such in order to increase the transmission capacity available on the infrastructure.

Referring to claim 19, **Lewis discloses in the abstract, figures 1 and 2 of** a method for receiving RF message signals having a wireless signal format including an address data format and message data using an RF port having an Ethernet interface **(Each Access Point 19 includes a plurality of wireless transceivers, the Network Interface Card attached via a port to the Access Point is an Ethernet network interface card or a PCMCIA radio card as in figure 2 and column 5, lines 53-62)**, a data processor **(main processor 30)** and an RF module **(access point 19)**, comprising

receiving said RF message signals in said RF module **(Access Point 19)** from at least two wireless local area subnetworks (36a and 36b transceivers) occupying common physical space and providing said signals as data signals to said data processor (main processor 30) **(As disclosed in column 4, lines 47 to column 5, lines 62, the transceivers 36a, 36b are coupled to the main processor 30 via a local bus 46. Information (Ethernet) packets are received via the transceivers 36a, 36b (Ethernet Interface/NIC/PCMCIA), intended to be forwarded onto the system backbone 17, are communicated to the main processor 30. In addition, as disclosed in the abstract that access point includes at two transceivers one communicating with one group of mobile terminals on one channel and another transceiver communicating to another different group of terminals on a second/separate channel)** as disclosed in ,

operating said data processor to interpret address data in said data signals and, in dependence on said address data encapsulating said message data and address data in an Ethernet packet and providing said Ethernet packet to said Ethernet interface (**As disclosed in column 4, lines 47 to column 5, lines 62, Information (Ethernet) packets are received via the transceivers 36a, 36b (Ethernet Interface/NIC/PCMCIA), intended to be forwarded onto**

the system backbone 17, are communicated to the main processor 30. The main processor forwards each packet onto the system backbone 17 to the address specified in the packet, the processor 30 receives a look-up table in the memory to determine if the mobile terminal 21 to which the packet is address is registered, if so, the processor determines from which particular transceiver 36a or 36b is assigned to communicating with particular mobile terminal 21 to which the packet is addressed. Based on such determination, the processor 30 forwards the received packet to the processor of the appropriate Ethernet interface (of the at least two wireless local area subnetwork occupying common physical space). *Lewis fails to explicitly disclose of providing a common cell controller coupled to a plurality of RF ports, wherein each RF port is configured to perform low level medium access control (MAC) functions and the cell controller is configured to perform high level MAC functions for the coupled plurality of RF ports.* Mahany discloses in **figs. 1, 3 and in col. 4, lines 39-65** of a method for operating: a multiple overlapping wireless local area subnetworks **[two wireless adapter able to communicate with multiple networks, see col. 4, lines 39-65]**, the method comprising:

providing a common cell controller **[CPU Processor 41, fig. 3]** coupled to a plurality of RF ports **[two wireless radios 42, 43, fig. 3]**, wherein the common cell controller **[CPU Processor 41, fig. 3]** in conjunction with each RF port **[two wireless radios 42, 43, fig. 3]**, provides wireless medium access to all of the wireless local area subnetworks for mobile units in a designated area associated with the RF port **[each wireless radio supports and provides a medium access to all of the wireless local area subnetworks for mobile units, see figs. 3, 7a, 9 and 10]**, wherein each RF port **[radio port 42, 43 see, fig. 3]** is configured to perform low

level medium access control (MAC) functions **[see col. 4, lines 39-65, MAC processor controls low level protocol functions]** and the cell controller **[CPU Processor 41, fig. 3]** is configured to perform high level MAC functions for the coupled plurality of RF ports **[see col. 4, lines 39-65, CPU processor controls the high-level communications protocol functions]**;

using the cell controller **[CPU Processor 41, fig. 3]** to provide multiple service set identifications through each RF port **[each radio includes an identification, see fig. 3]**, wherein each service set identification is associated with a corresponding wireless subnetwork **[each wireless radio is associated with a corresponding wireless subnetwork, see figs. 9 and 10]**, wherein said RF ports are operated to perform low level MAC functions **[see col. 4, lines 39-65, MAC processor controls low level protocol functions]** and to relay signals received from mobile units to said cell controller and to relay signals received from the cell controller to said mobile units **[see, col. 5, lines 5-30 and to col. 4, lines 39-65]**, and

wherein said cell controller **[CPU Processor 41, fig. 3]** is operated to control association of said mobile units **[mobile units of fig. 9 and 10]** with said RF port **[radio port 42, 43 see, fig. 3]**, including sending and receiving association signals between said RF port and said cell controller, said association of said mobile units utilizing at least two wireless local area networks occupying common physical space **[see, col. 5, lines 5-30 and to col. 4, lines 39-65 and fig. 3]**. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Lewis to include the teachings of low-level MAC functionality by a MAC controller and high-level functionality by a cell processor as taught by Mahany. One is motivated as such in order to increase the transmission capacity available on the infrastructure.

Referring to claim 23, Lewis discloses in the **abstract, figure 1 and figure 2** of a simplified wireless local area network system **(LAN 15)** comprising:

a computer having a data processor **(main processor 30)** and a memory **(34)**;

an RF port **(interface)** having an RF port data processor **(Network Interface Card/PCMCIA radio card),** an RF module **(Access Point 19)** and a data communications interface coupled to said computer;

a first program in said memory **34** of said computer for operating said computer data processor to perform first wireless data communications functions said functions including association with mobile units via at least two wireless local area subnetworks occupying common physical space (**As disclosed in column 4, lines 47 to column 5, lines 62, Information (Ethernet) packets are received via the transceivers 36a, 36b (Ethernet Interface/NIC/PCMCIA), intended to be forwarded onto the system backbone 17, are communicated to the main processor 30. The main processor forwards each packet onto the system backbone 17 to the address specified in the packet, the processor 30 receives a look-up table in the memory to determine if the mobile terminal 21 to which the packet is address is registered, if so, the processor determines from which particular transceiver 36a or 36b is assigned to communicating with particular mobile terminal 21 to which the packet is addressed. Based on such determination, the processor 30 forwards the received packet to the processor of the appropriate Ethernet interface (of the at least two wireless local area subnetwork occupying common physical space**). **In addition, as disclosed in the abstract that access point includes at two transceivers one communicating with one group**

of mobile terminals on one channel and another transceiver communicating to another different group of terminals on a second/separate channel),

and a second program for operating said RF port (Network Ethernet Interface) data processor to perform second wireless data communications functions (**Based on the determination of the first program as disclosed in column 4, lines 47 to column 5, lines 62, the processor 30 forwards the received packet to the processor of the appropriate Ethernet interface (of the at least two wireless local area subnetwork occupying common physical space**). *Lewis fails to explicitly disclose of providing a common cell controller coupled to a plurality of RF ports, wherein each RF port is configured to perform low level medium access control (MAC) functions and the cell controller is configured to perform high level MAC functions for the coupled plurality of RF ports.* Mahany discloses in **figs. 1, 3 and in col. 4, lines 39-65** of a method for operating: a multiple overlapping wireless local area subnetworks **[two wireless adapter able to communicate with multiple networks, see col. 4, lines 39-65]**, the method comprising:

providing a common cell controller [**CPU Processor 41, fig. 3**] coupled to a plurality of RF ports **[two wireless radios 42, 43, fig. 3]**, wherein the common cell controller **[CPU Processor 41, fig. 3]** in conjunction with each RF port **[two wireless radios 42, 43, fig. 3]**, provides wireless medium access to all of the wireless local area subnetworks for mobile units in a designated area associated with the RF port **[each wireless radio supports and provides a medium access to all of the wireless local area subnetworks for mobile units, see figs. 3, 7a, 9 and 10]**, wherein each RF port **[radio port 42, 43 see, fig. 3]** is configured to perform low level medium access control (MAC) functions **[see col. 4, lines 39-65, MAC processor controls**

low level protocol functions] and the cell controller **[CPU Processor 41, fig. 3]** is configured to perform high level MAC functions for the coupled plurality of RF ports **[see col. 4, lines 39-65, CPU processor controls the high-level communications protocol functions]**;

using the cell controller **[CPU Processor 41, fig. 3]** to provide multiple service set identifications through each RF port **[each radio includes an identification, see fig. 3]**, wherein each service set identification is associated with a corresponding wireless subnetwork **[each wireless radio is associated with a corresponding wireless subnetwork, see figs. 9 and 10]**, wherein said RF ports are operated to perform low level MAC functions **[see col. 4, lines 39-65, MAC processor controls low level protocol functions]** and to relay signals received from mobile units to said cell controller and to relay signals received from the cell controller to said mobile units **[see, col. 5, lines 5-30 and to col. 4, lines 39-65]**, and

wherein said cell controller **[CPU Processor 41, fig. 3]** is operated to control association of said mobile units **[mobile units of fig. 9 and 10]** with said RF port **[radio port 42, 43 see, fig. 3]**, including sending and receiving association signals between said RF port and said cell controller, said association of said mobile units utilizing at least two wireless local area networks occupying common physical space **[see, col. 5, lines 5-30 and to col. 4, lines 39-65 and fig. 3]**. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Lewis to include the teachings of low-level MAC functionality by a MAC controller and high-level functionality by a cell processor as taught by Mahany. One is motivated as such in order to increase the transmission capacity available on the infrastructure.

Referring to claim 27, Lewis discloses in **figures 1, 2 and in column 4, lines 47 to column 5, lines 25** of a wireless access device **(transceivers 36a, 36b)** for providing wireless access to a communication system **(figure 2)**, comprising a modem **(network interface cards intended for a wireless local area network inherently comprise a radio modem, whereby it is possible to set up a wireless data transmission connection to the radio modem of the local area network as specified in figure 2)** for sending and receiving data messages on said communications system and an RF port **(access point 19 may include two or more peripheral ports (e.g., PCMCIA card slots) for receiving respective transceiver radios)** , comprising a data interface coupled to said modem **(figure 1 and 2)** , a data processor **(main processor 20)** and an RF module **(Access Point 19)**, said processor **(main processor 20)** being programmed to receive data messages from said modem , to format said messages for wireless data communications and to provide said formatted messages to said RF module **(Access Point 19)** for transmission by RF data signals to at least one remote station via at least two wireless local area subnetworks occupying common physical space (**as disclosed in the abstract that access point includes at two transceivers one communicating with one group of mobile terminals on one channel and another transceiver communicating to another different group of terminals on a second/separate channel**), and to receive RF data signals from said at least one remote station **(mobile stations of figure 1)** via at least two wireless local area subnetworks occupying common physical space, and to provide data messages to said modem to be sent on said communications system (**As disclosed in column 4, lines 47 to column 5, lines 62, Information (Ethernet) packets are received via the transceivers 36a, 36b (Ethernet Interface/NIC/PCMCIA), intended to be forwarded onto the system backbone 17, are**

communicated to the main processor 30. The main processor forwards each packet onto the system backbone 17 to the address specified in the packet, the processor 30 receives a look-up table in the memory to determine if the mobile terminal 21 to which the packet is address is registered, if so, the processor determines from which particular transceiver 36a or 36b is assigned to communicating with particular mobile terminal 21 to which the packet is addressed. Based on such determination, the processor 30 forwards the received packet to the processor of the appropriate Ethernet interface (of the at least two wireless local area subnetwork occupying common physical space) as claim. *Lewis fails to explicitly disclose of providing a common cell controller coupled to a plurality of RF ports, wherein each RF port is configured to perform low level medium access control (MAC) functions and the cell controller is configured to perform high level MAC functions for the coupled plurality of RF ports.* Mahany discloses in **figs. 1, 3 and in col. 4, lines 39-65** of a method for operating: a multiple overlapping wireless local area subnetworks **[two wireless adapter able to communicate with multiple networks, see col. 4, lines 39-65]**, the method comprising:

providing a common cell controller **[CPU Processor 41, fig. 3]** coupled to a plurality of RF ports **[two wireless radios 42, 43, fig. 3]**, wherein the common cell controller **[CPU Processor 41, fig. 3]** in conjunction with each RF port **[two wireless radios 42, 43, fig. 3]**, provides wireless medium access to all of the wireless local area subnetworks for mobile units in a designated area associated with the RF port **[each wireless radio supports and provides a medium access to all of the wireless local area subnetworks for mobile units, see figs. 3, 7a, 9 and 10]**, wherein each RF port **[radio port 42, 43 see, fig. 3]** is configured to perform low level medium access control (MAC) functions **[see col. 4, lines 39-65, MAC processor controls**

low level protocol functions] and the cell controller **[CPU Processor 41, fig. 3]** is configured to perform high level MAC functions for the coupled plurality of RF ports **[see col. 4, lines 39-65, CPU processor controls the high-level communications protocol functions]**;

using the cell controller **[CPU Processor 41, fig. 3]** to provide multiple service set identifications through each RF port **[each radio includes an identification, see fig. 3]**, wherein each service set identification is associated with a corresponding wireless subnetwork **[each wireless radio is associated with a corresponding wireless subnetwork, see figs. 9 and 10]**, wherein said RF ports are operated to perform low level MAC functions **[see col. 4, lines 39-65, MAC processor controls low level protocol functions]** and to relay signals received from mobile units to said cell controller and to relay signals received from the cell controller to said mobile units **[see, col. 5, lines 5-30 and to col. 4, lines 39-65]**, and

wherein said cell controller **[CPU Processor 41, fig. 3]** is operated to control association of said mobile units **[mobile units of fig. 9 and 10]** with said RF port **[radio port 42, 43 see, fig. 3]**, including sending and receiving association signals between said RF port and said cell controller, said association of said mobile units utilizing at least two wireless local area networks occupying common physical space **[see, col. 5, lines 5-30 and to col. 4, lines 39-65 and fig. 3]**. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Lewis to include the teachings of low-level MAC functionality by a MAC controller and high-level functionality by a cell processor as taught by Mahany. One is motivated as such in order to increase the transmission capacity available on the infrastructure.

Referring to claim 31, Lewis discloses in figure 1 of a method for providing wireless access to the Internet over the PSTN, comprising providing a modem coupled to the Internet **(network interface cards intended for a wireless local area network inherently comprise a radio modem, whereby it is possible to set up a wireless data transmission connection to the radio modem of the local area network as specified in figure 2)** and having a data communications interface **(main processor 30 of figure 2)** connected to an RF port **(PCMCIA slot of the transceiver/PCMCIA card as disclosed in figure 2 and column 5, lines 46-62)**, configuring said RF port for wireless data communication to a mobile unit having a predetermined wireless communications address **(as disclosed in the abstract, column 2, lines 22 to 64, the RF port having the PCMCIA/transceivers 36a, 36b is configured to be operating via first frequency hopping sequence to a plurality of mobile devices and second frequency hopping sequence to a plurality of different mobile devices respectively)**, and

providing at least one mobile unit (particular mobile terminal 21) configured with said predetermined wireless communications address for conducting RF data communications with said RF port (36a or 36b) via at least two wireless local area subnetworks occupying common physical space, said RF port being arranged to relay communications between said mobile unit and said modem (**As disclosed in column 4, lines 47 to column 5, lines 62, the transceivers 36a, 36b are coupled to the main processor 30 via a local bus 46. Information (Ethernet) packets are received via the transceivers 36a, 36b (Ethernet Interface/NIC/PCMCIA), intended to be forwarded onto the system backbone 17, are communicated to the main processor 30. The main processor forwards each packet onto the system backbone 17 to the address specified in the packet, the processor 30 receives a look-up table in the memory**

to determine if the mobile terminal 21 to which the packet is address is registered, if so, the processor determines from which particular transceiver 36a or 36b is assigned to communicating with particular mobile terminal 21 to which the packet is addressed. Based on such determination, the processor 30 forwards the received packet to the processor of the appropriate Ethernet interface (of the at least two wireless local area subnetwork occupying common physical space) as claim. *Lewis fails to explicitly disclose of providing a common cell controller coupled to a plurality of RF ports, wherein each RF port is configured to perform low level medium access control (MAC) functions and the cell controller is configured to perform high level MAC functions for the coupled plurality of RF ports.* Mahany discloses in **figs. 1, 3 and in col. 4, lines 39-65** of a method for operating: a multiple overlapping wireless local area subnetworks **[two wireless adapter able to communicate with multiple networks, see col. 4, lines 39-65]**, the method comprising:

providing a common cell controller **[CPU Processor 41, fig. 3]** coupled to a plurality of RF ports **[two wireless radios 42, 43, fig. 3]**, wherein the common cell controller **[CPU Processor 41, fig. 3]** in conjunction with each RF port **[two wireless radios 42, 43, fig. 3]**, provides wireless medium access to all of the wireless local area subnetworks for mobile units in a designated area associated with the RF port **[each wireless radio supports and provides a medium access to all of the wireless local area subnetworks for mobile units, see figs. 3, 7a, 9 and 10]**, wherein each RF port **[radio port 42, 43 see, fig. 3]** is configured to perform low level medium access control (MAC) functions **[see col. 4, lines 39-65, MAC processor controls low level protocol functions]** and the cell controller **[CPU Processor 41, fig. 3]** is configured to

perform high level MAC functions for the coupled plurality of RF ports **[see col. 4, lines 39-65, CPU processor controls the high-level communications protocol functions]**;

using the cell controller **[CPU Processor 41, fig. 3]** to provide multiple service set identifications through each RF port **[each radio includes an identification, see fig. 3]**, wherein each service set identification is associated with a corresponding wireless subnetwork **[each wireless radio is associated with a corresponding wireless subnetwork, see figs. 9 and 10]**, wherein said RF ports are operated to perform low level MAC functions **[see col. 4, lines 39-65, MAC processor controls low level protocol functions]** and to relay signals received from mobile units to said cell controller and to relay signals received from the cell controller to said mobile units **[see, col. 5, lines 5-30 and to col. 4, lines 39-65]**, and

wherein said cell controller **[CPU Processor 41, fig. 3]** is operated to control association of said mobile units **[mobile units of fig. 9 and 10]** with said RF port **[radio port 42, 43 see, fig. 3]**, including sending and receiving association signals between said RF port and said cell controller, said association of said mobile units utilizing at least two wireless local area networks occupying common physical space **[see, col. 5, lines 5-30 and to col. 4, lines 39-65 and fig. 3]**. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Lewis to include the teachings of low-level MAC functionality by a MAC controller and high-level functionality by a cell processor as taught by Mahany. One is motivated as such in order to increase the transmission capacity available on the infrastructure.

Referring to claim 33, Lewis discloses in **figure 1, 2 and column 4, lines 47 to column 5, lines 62** the system for sending and receiving data messages to at least one mobile unit **(mobile terminal 21n)**, comprising

at least one RF port **(PCMCIA slot as in figures 1, 2, and in column 5, lines 54-62)** having an RF module **(Access Point)** for sending and receiving data messages to said at least one mobile unit **(mobile terminal 21)** using a first RF communications protocol **(Ethernet protocol as disclosed in column 4, lines 47 to column 5, lines 62, Information (Ethernet) packets are received via the transceivers 36a, 36b (Ethernet Interface/NIC/PCMCIA)** capable of operating via at least two wireless local area subnetworks occupying common physical space, having a wired interface **(figure 2, The main processor 30 is coupled to the system backbone 17 by a network interface 32)** for sending and receiving data messages using a wired communications protocol, and

a programmed processor **(main processor 30 of figure 2)** for relaying data messages **(packets)** received on said wired interface **(32)** using said RF communications protocol **(WLAN)** and for relaying data messages received by said RF module **(Access Point)** using said wired communications protocol **(as disclosed in column 4, lines 19 to column 5, lines 62),** and

at least one cell controller **(main processor 30 of figure 2)** for sending data messages to said wired interface 32 of said RF port and for receiving data messages from said RF port using said wired communications protocol **(as disclosed figure 2 and in column 4, lines 19 to column 5, lines 25, the main processor 30 is coupled to the system backbone 17 by a network interface 32. The network interface 32 permits the main processor 30 to send and receive data packets via the system backbone 17 using conventional techniques. The information**

packets are received by the main processor 30 from the system backbone 17). *Lewis fails to explicitly disclose of providing a common cell controller coupled to a plurality of RF ports, wherein each RF port is configured to perform low level medium access control (MAC) functions and the cell controller is configured to perform high level MAC functions for the coupled plurality of RF ports.* Mahany discloses in **figs. 1, 3 and in col. 4, lines 39-65** of a method for operating: a multiple overlapping wireless local area subnetworks **[two wireless adapter able to communicate with multiple networks, see col. 4, lines 39-65]**, the method comprising:

providing a common cell controller **[CPU Processor 41, fig. 3]** coupled to a plurality of RF ports **[two wireless radios 42, 43, fig. 3]**, wherein the common cell controller **[CPU Processor 41, fig. 3]** in conjunction with each RF port **[two wireless radios 42, 43, fig. 3]**, provides wireless medium access to all of the wireless local area subnetworks for mobile units in a designated area associated with the RF port **[each wireless radio supports and provides a medium access to all of the wireless local area subnetworks for mobile units, see figs. 3, 7a, 9 and 10]**, wherein each RF port **[radio port 42, 43 see, fig. 3]** is configured to perform low level medium access control (MAC) functions **[see col. 4, lines 39-65, MAC processor controls low level protocol functions]** and the cell controller [**CPU Processor 41, fig. 3]** is configured to perform high level MAC functions for the coupled plurality of RF ports **[see col. 4, lines 39-65, CPU processor controls the high-level communications protocol functions]**;

using the cell controller **[CPU Processor 41, fig. 3]** to provide multiple service set identifications through each RF port **[each radio includes an identification, see fig. 3]**, wherein each service set identification is associated with a corresponding wireless subnetwork **[each wireless radio is associated with a corresponding wireless subnetwork, see figs. 9 and 10]**,

wherein said RF ports are operated to perform low level MAC functions **[see col. 4, lines 39-65, MAC processor controls low level protocol functions]** and to relay signals received from mobile units to said cell controller and to relay signals received from the cell controller to said mobile units **[see, col. 5, lines 5-30 and to col. 4, lines 39-65]**, and

wherein said cell controller **[CPU Processor 41, fig. 3]** is operated to control association of said mobile units **[mobile units of fig. 9 and 10]** with said RF port **[radio port 42, 43 see, fig. 3]**, including sending and receiving association signals between said RF port and said cell controller, said association of said mobile units utilizing at least two wireless local area networks occupying common physical space **[see, col. 5, lines 5-30 and to col. 4, lines 39-65 and fig. 3]**. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Lewis to include the teachings of low-level MAC functionality by a MAC controller and high-level functionality by a cell processor as taught by Mahany. One is motivated as such in order to increase the transmission capacity available on the infrastructure.

Referring to claim 2, Lewis discloses in column 4, lines 47 to column 5, lines 62 and column 9, lines 50-55 of a method for operating a wireless local area network as specified in Claim 1, wherein signals are sent between said RF port (PCMCIA Slot) and said cell controller (main processor 30) using a first data protocol (NIC/PCMCIA radio card), and wherein signals are sent between said RF ports (transceivers 36a, 36b) and said mobile units (21) using a second data protocol (802.11, frequency hopping) , and wherein said signals between said RF port (transceivers 36a, 36b) and said cell controllers (main processor 30) comprise data packets using

said first data protocol (NIC/PCMCIA radio) encapsulating data packets using said second data protocol (802.11 as disclosed in column 9, lines 50-55) as claim.

Referring to claims 3 and 20, Lewis discloses a method for operating a wireless local area network as specified in Claim 2 wherein said first protocol is an Ethernet protocol (As disclosed in column 4, lines 47 to column 5, lines 62, Information (Ethernet) packets are received via the transceivers 36a, 36b (Ethernet Interface/NIC/PCMCIA) clearly establishing that the first protocol is an Ethernet protocol as claim.

Referring to claim 4, Lewis discloses in column 9, that a convention frequency hopping system utilizes a method for operating a wireless local area network as specified in Claim 3 wherein said second protocol is an IEEE Standard 802.11 protocol as claim.

Referring to claim 5, Lewis discloses in the abstract, column 2, lines 23-42 a method for operating a wireless local area network as specified in Claim 4 wherein said at least two wireless local area subnetworks (transceivers 36a, 36b) comprise a subnetwork for public use (first frequency hopping sequence) and a subnetwork for secure (second frequency hopping sequence) based on a predetermined criteria use as claim.

Referring to claim 6, Lewis discloses in the abstract and in column 2, lines 23-42 that a method for operating a wireless local area network as specified in Claim 5, wherein upon activation of said subnetwork for secure use (specific frequency hopping sequence channel), suspending service on said subnetwork for public use (based on a predetermined criteria, specific frequency hopping sequence channel may not provide access to other pubic channels) as claim.

Referring to claim 17 and 22, Lewis discloses in column 4, lines 47 to column 5, lines 25 a method as specified in Claim 15 further comprising operating said data processor (main processor 30) to control said radio module (transceivers/access point) as claim.

Referring to claim 24, Lewis discloses in column 4, lines 47 to column 5, lines 60 a system as specified in Claim 23 wherein said second program operates said RF port data processor 30 to perform second wireless data communications functions, including control of said RF module (Access Point) as claim.

Referring to claim 26, Lewis discloses in column 4, lines 47 to column 5, line 60 of a system as specified in Claim 23 wherein said second program is stored in said computer memory 34 and wherein said RF port data processor 30 is arranged to download said second program (as disclosed memory provides the processor a look-up table to determine if the mobile terminal is registered as disclosed in column 4, lines 47 to column 5, lines 25) as claim.

Referring to claim 32, Lewis discloses in column 6, lines 13-59 wherein said step of providing said mobile unit 21, comprises providing a computer having an RF port (Network Interface Card/PCMCIA which receives beacons from the transceivers of the access points as disclosed in column 6, lines 13-59) as claim.

Referring to claim 34, Lewis discloses in figure 1, 2 and column 4, lines 46 to column 5, lines 62 wherein there are provided a plurality of said RF ports (PCMCIA Slots with transceivers as disclosed in column 5, lines 53-62), and wherein said cell controller (main processor 30) is arranged to address said data messages to said RF ports using said wired communication protocol.

Referring to claim 35, Lewis discloses in column 4, lines 46-62 and in figures 1 and 2 of a system as specified in claim 34 wherein said at least one mobile unit (21a-21d of figure 1) is associated with one of said RF ports (transceiver 36a or 36b having a PCMCIA radio card), and wherein said processor (main processor 30) is programmed to interpret source address data received in said RF communications protocol and for relaying a received message using said wired communications protocol only if said source address data corresponding to a mobile unit associated with said RF port (As disclosed in column 4, lines 47 to column 5, lines 62, Information (Ethernet) packets are received via the transceivers 36a, 36b (Ethernet Interface/NIC/PCMCIA), intended to be forwarded onto the system backbone 17, are communicated to the main processor 30. The main processor forwards each packet onto the system backbone 17 to the address specified in the packet, the processor 30 receives a look-up table in the memory to determine if the mobile terminal 21 to which the packet is address is registered, if so, the processor determines from which particular transceiver 36a or 36b is assigned to communicating with particular mobile terminal 21 to which the packet is addressed. Based on such determination, the processor 30 forwards the received packet to the processor of the appropriate Ethernet interface (of the at least two wireless local area subnetwork occupying common physical space) as claim.

Referring to claim 36, Lewis discloses wherein said cell controller (main processor 30) is arranged to provide messages to said RF port (NIC slot of mobile terminal 21a-21d of figure 1) comprising mobile unit (mobile unit 21) address data and message data encapsulated in a data packet following said wired communications protocol (as disclosed in column 4, lines 46 to column 5, lines 62) as claim.

Referring to claim 37, Lewis discloses wherein a cell controller (main processor 30) is arranged to provide said mobile unit (21 of figure 1) address data and said message data in said RF communications protocol encapsulated in said wired communications format (as disclosed in column 4, lines 46 to column 5, lines 62) as claim.

Referring to claim 38, Lewis discloses wherein said RF port (transceiver slot 36a, 36b) is arranged to encapsulate messages received by said RF module (Access Point) in a data packet using said wired communication protocol as disclosed in (column 4, lines 46 to column 5, lines 62) as claim

Referring to claim 39, Mahany discloses in col. 5, lines 33-44 wherein the cell controller provides extended service set identifiers/addresses.

Referring to claim 40, Mahany discloses the cell controller provides basic service identifiers/addresses.

Referring to claim 41, Mahany discloses in col. 6,lines 1-7 where the RF port allocates data bandwidth amongst the service set identifications based on commands from cell controller.

Referring to claim 42, Mahany discloses in col. 1, lines 35-42 of WLAN's use frequency transmission to communicate between roaming computer devices, inherently establishing wherein the RF port generates 802.11 beacon for each service set identifier.

Referring to claim 43, Mahany discloses in col. 4,lines 56-65 wherein the cell controller determines which one of the multiple overlapping wireless local areas subnetworks a mobile unit communicating through an RF port is operating on.

Referring to claim 44, Mahany discloses in col. 5, lines 5-16 that high level protocol, which includes security protocols are handled by the cell controller verifies levels of security

provided in connection with access by mobile units to the multiple overlapping wireless local area networks.

Referring to claim 45, Mahany discloses in col. 5, lines 45-54 that CPU processor, the cell controller prioritizes communication based on quality information through the multiple overlapping wireless local area subnetworks.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 7-14 rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis in view of Mahany as applied above, and further in view of Bahl (U.S. Patent No. 6,629,151).

Referring to claim 7, Lewis discloses in figures 1, 2, 4 and column 4, lines 46 to column 5, lines 62 a method for operating an RF port (transceiver/PCMCIA port 36a, 36b) having a radio module (PCMCIA radio card as in column 5, lines 53-62), a digital processor (main processor 30 figure 2), memory (memory 34 of figure 2), comprising storing a bootloader program in said and operating said RF port under said downloaded instructions to send and receive messages over at least two wireless local area subnetworks occupying common physical space using said radio module (as discloses in figure 4 and in column 7, lines 17-57, the processor 30 refers to its look-up table in the memory 34 to see if the mobile terminal 21 identified in the packet is included, if

yes, the processor selects the corresponding transceiver 36 assigned to the mobile terminal 21 indicated in the look-up table). Lewis discloses of accessing the look-up table within the memory in order for the processor to download instruction. Lewis however fails to explicitly disclose of random access memory and read-only memory and read-only memory, operating said digital processor to download instructions from a computer to said random access memory using said bootloader program. Bahl discloses in figure 1 of a system memory, which includes ROM 24 and RAM25 and further discloses in the respective portions of the specification that the ROM 24 helps to transfer information between elements within the personal computer having a processor 21. The processor 21 downloads instruction from RAM25 using program modules. Therefore, it would have been obvious to one of ordinary skill in the art to modify the explicit teaching of ROM and RAM within the system memory of a computer as taught by Bahl into Lewis in view of Mahany's invention in order to provide multi-type of computer readable media which can store data that is accessible by a computer in establishing wireless LAN communication.

Referring to claims 8 and 9, Lewis discloses in column 4, lines 47 to column 5, lines 62 wherein said step of operating said RF port (PCMCIA radio card within the RF slot) comprises receiving messages from said computer including protocol message portions for RF message transmission, and transmitting said message including said protocol message portions as an RF and sending RF messages to the computer as data signals encapsulated in a further message protocol (transceivers 36a, 36b receive information packets from a mobile station for RF message transmission and transmit the information packets as a RF signal to the processor, the

processor 30 determines if the mobile terminal 21 to which the packet is addressed is registered if so, based on the determination, processor forwards RF message to the mobile station) as claim.

Referring to claim10, Lewis discloses in column 4, lines 47 to column 5, lines 62 a method as specified in Claim 9 further comprising interpreting said RF protocol using said downloaded instructions and sending said RF messages to said computer only if said RF messages include an identification of said RF port (the processor 30 reviews a look-up table in the memory to determine if the mobile terminal 21 to which the packet is addressed is registered, if so, processor determines which particular transceiver is assigned to communicating with particular terminal 21 to which the packet is address, based on the determination the RF message is forwarded to the mobile station if the message includes an identification of the RF transceiver port) as claim .

Referring to claim 11, 13, and 14 Lewis discloses in column 4, lines 47 to column 5, lines 62 a method as specified in Claim 7 wherein said downloaded instructions configure (each transceiver is configured to operate on a different communication channel) said computer and said RF port to operate as an access point or mobile unit for communication with mobile units as claim

Referring to claim 12, Lewis discloses in column 6, lines 13-59 wherein said computer (processor 30) is operated to control association of said mobile units with said computer and RF port (when the mobile terminal 21 registers with the transceiver 36a, the main processor 30 disables the secondary transceiver 36b by causing it not to respond to the request to register broadcast by mobile terminal 21) as claim.

8. Claims 16, 21 and 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis in view of Mahany as applied above, further in view of Jusa et al. (U.S. Patent No. 6,031,863).

Referring to claim 16, 21 and 25, Lewis discloses in figure 2 of a main processor 30. Lewis fails to disclose operating said data processor to perform a cyclic redundancy computation on said data message and adding the result thereof to said data message. Jusa et al teaches of a Wireless LAN System. Jusa et al discloses in figure 8 and column 7, lines 40-65 that the processor within the base station device performs frame check sequence to detect an error in the entirety of the frame using a CRC code indicative of an error detection code. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Lewis in view of Mahany to include teachings of CRC as taught by Jusa et al in order to detect an error in the entirety of the frame providing accuracy and quality of service.

9. Claims 28-30 rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis in view of Mahany as applied above, and further in view of Gilbert et al. (U.S. Patent No. 6,205,495).

Referring to claim 28 and 29, Lewis discloses in figure 2 of network interface cards (PCMCIA Card) intended for a wireless local area network inherently comprise a radio modem, whereby it is possible to set up a wireless data transmission connection to the radio modem of the local area network. Lewis in view of Mahany fails to discloses that wireless access device as specified in Claim 27 wherein said communications system is a DSL communications system connected to the Internet, and wherein said modem comprises a DSL modem and a wireless access device as specified in Claim 27 wherein said communications system is a two-way cable communications system connected to the Internet, and wherein said modem comprises a cable

modem. Gilbert discloses in figure 2 and 3 and column 4, lines 1-25 and column 6, lines 12-27 that network communications device 330 which comprises a modem for communicating over network 336 includes a PCMCIA interface 332 and a modem interface 334 for converting information received from base station 320 into a format compatible with network 336, modem 330 may be a cable modem or DSL modem. Therefore, it would have been obvious to one of ordinary skill in the art to modify the PCMCIA card having a radio modem to be a cable modem or DSL modem in order to be in a format compatible with given respective cable or DSL network.

Referring to claim 30, Lewis discloses in column 4, liens 47-60 that each access point 19 includes a plurality of wireless transceivers, such transceivers 36 may be RF, optical, infrared, thus clearly establishing wherein said communication system may comprise a fiber optic system, and wherein said modem comprises a fiber optical modem as claim.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G. Shah whose telephone number is 571-272-3144. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cgs
November 16, 2005

Chirag Shah

Chirag Shah, Patent Examiner 2664

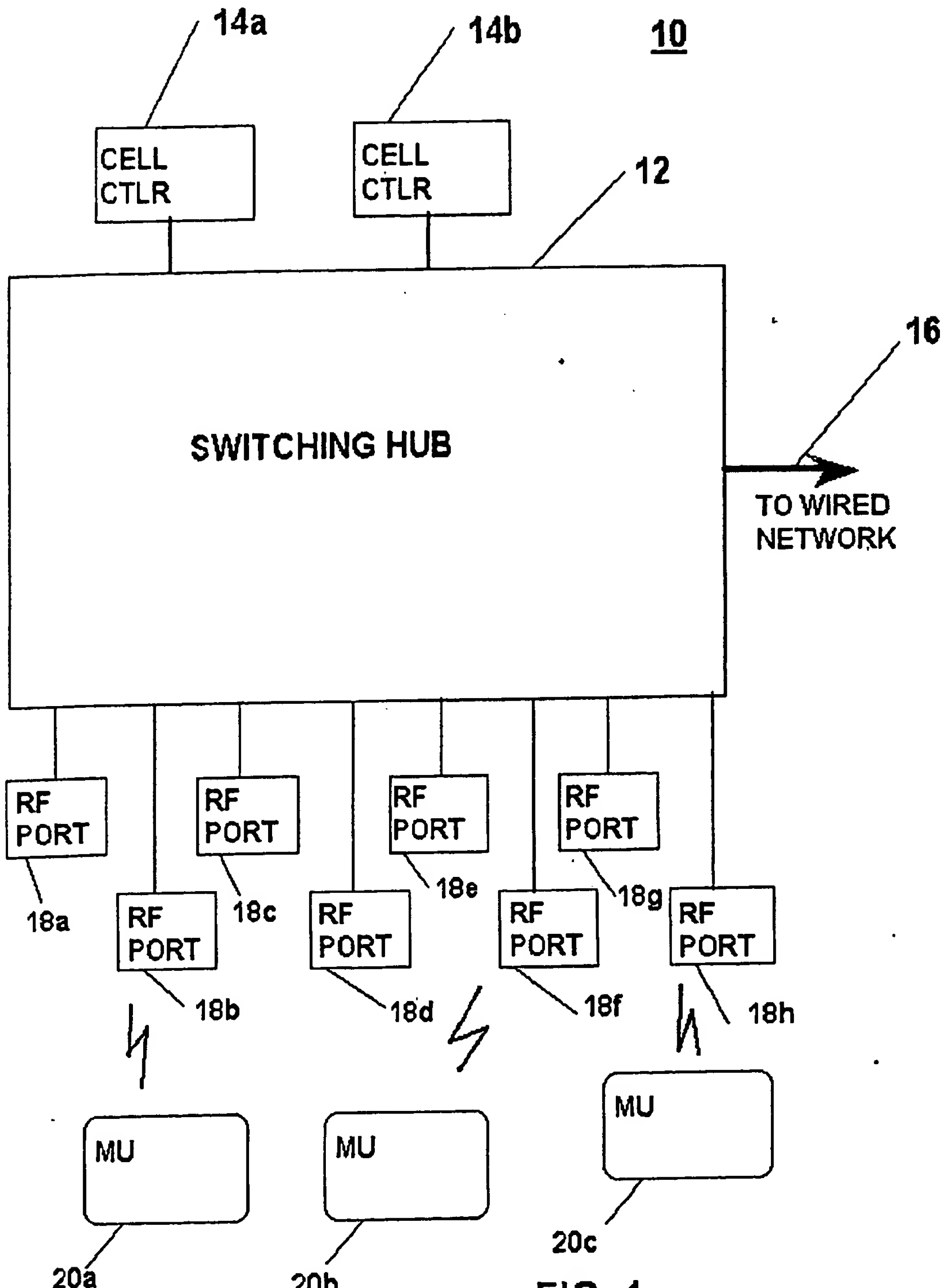

14a
14b
10
CELL CTLR
CELL CTLR
12
16
SWITCHING HUB
TO WIRED NETWORK
RF PORT
18a
18b
18c
18d
18e
18f
18g
18h
MU
20a
20b
20c

FIG. 1

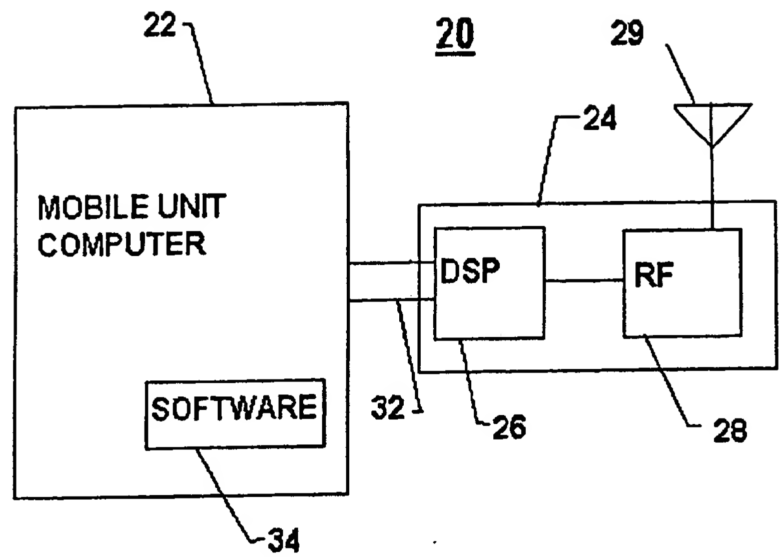


FIG. 2

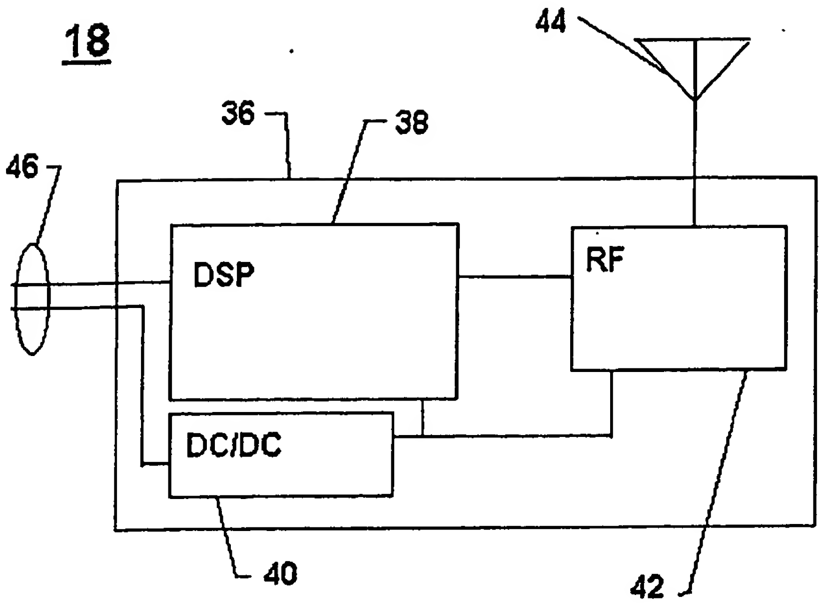


FIG.3

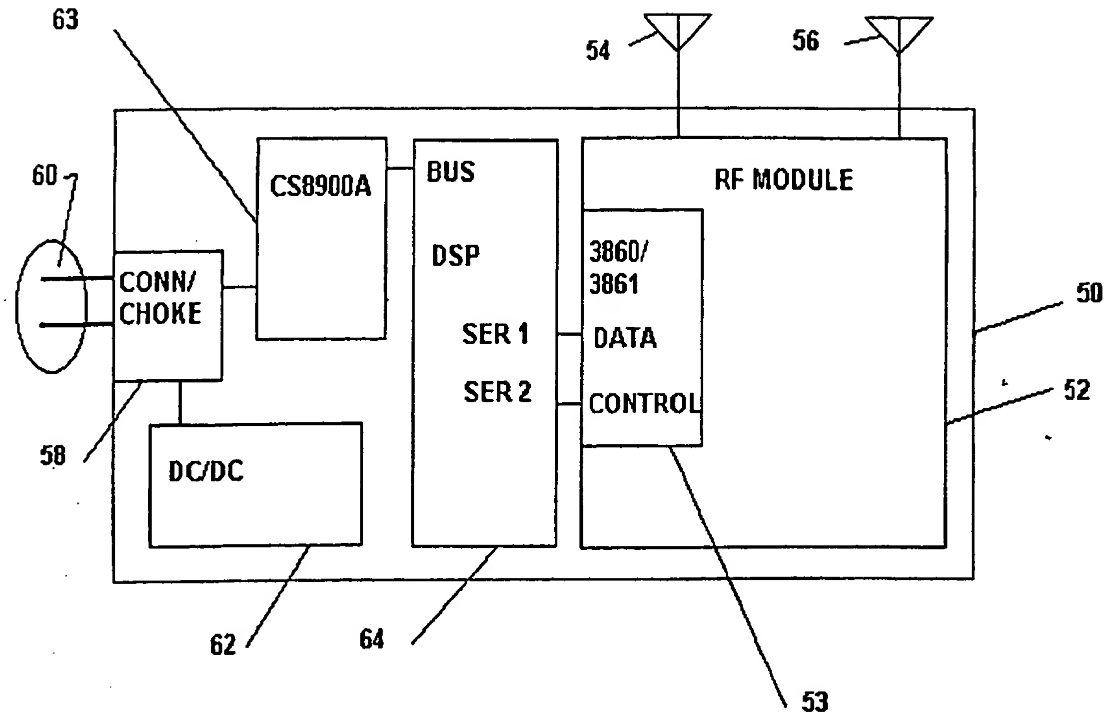

63
54
56
60
CONN/
CHOKE
CS8900A
BUS
DSP
SER 1
SER 2
RF MODULE
3860/
3861
DATA
CONTROL
50
52
58
DC/DC
62
64
53

FIG. 4

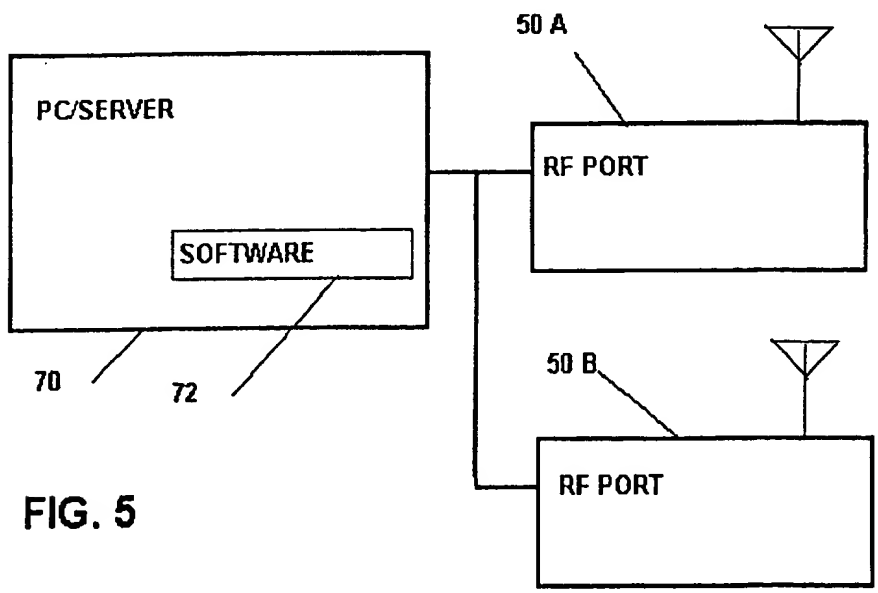

50 A
PC/SERVER
RF PORT
SOFTWARE
70
72
50 B
RF PORT

FIG. 5

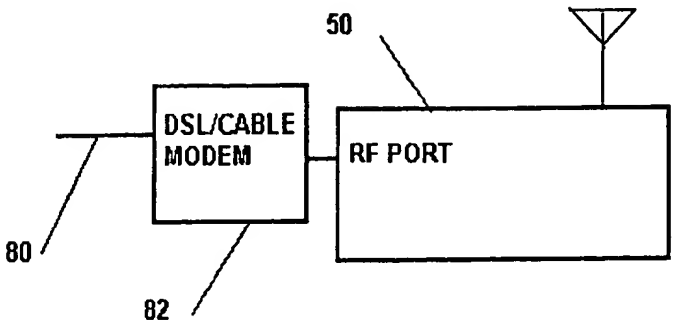


FIG.6

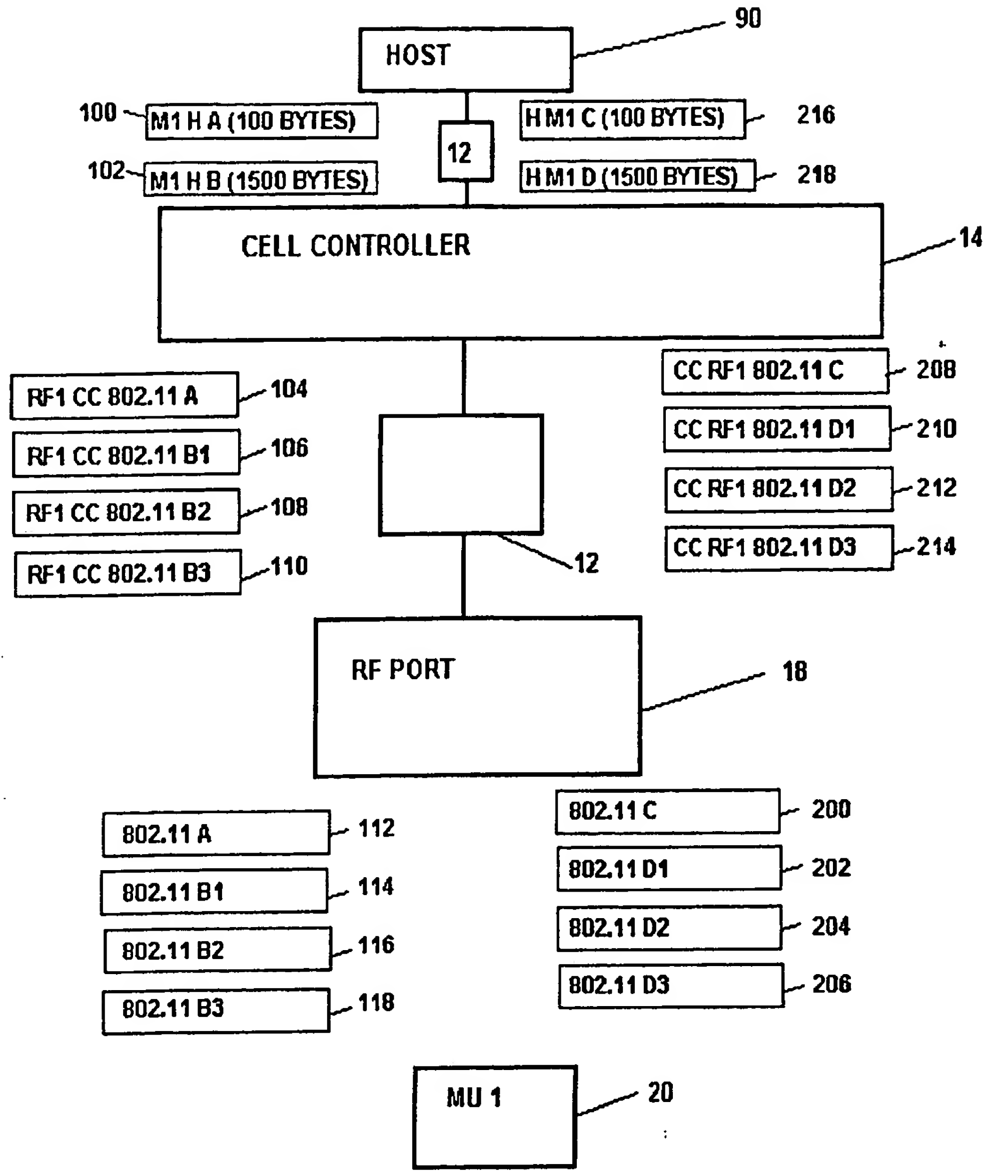
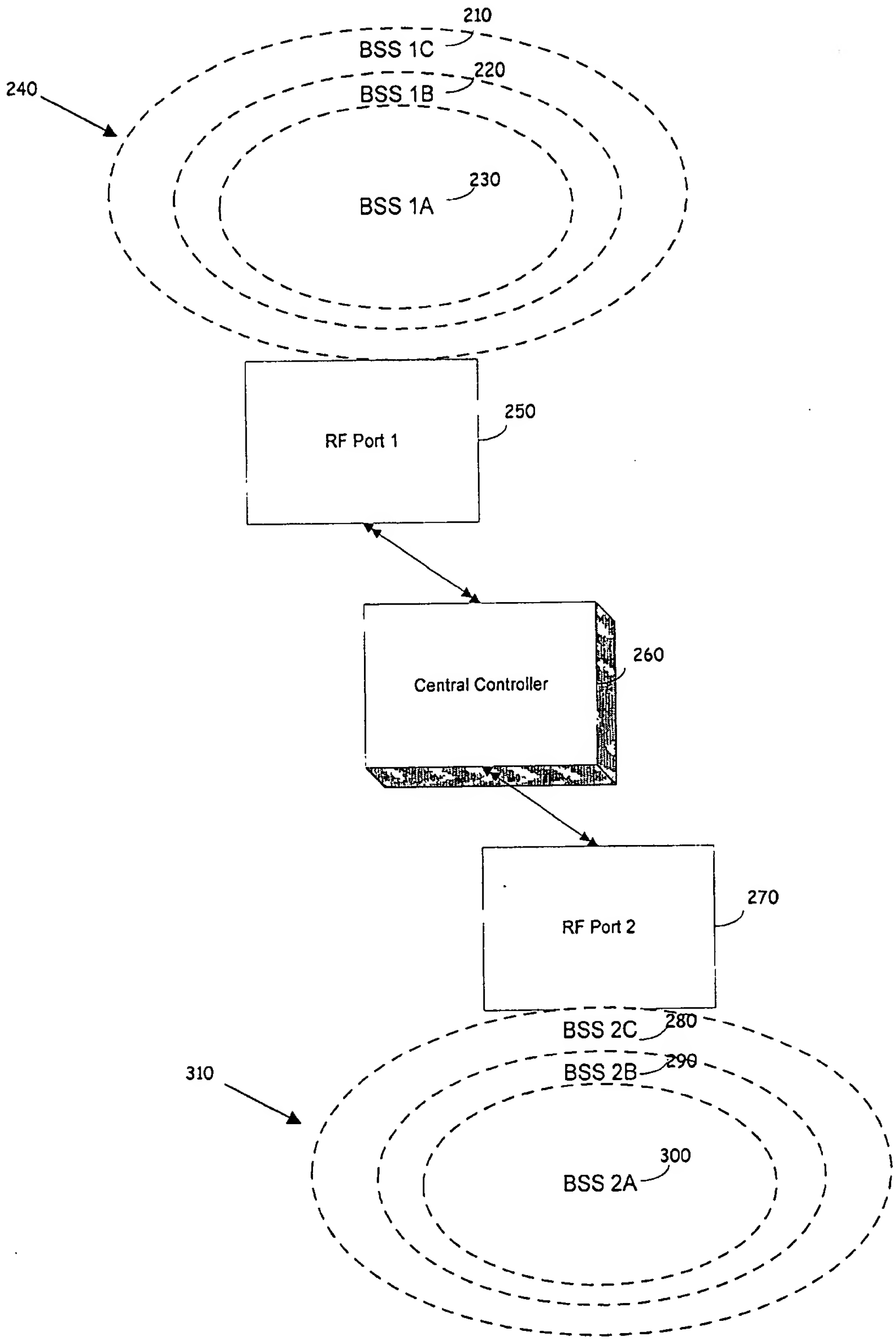

HOST
90
100
M1 H A (100 BYTES)
102
M1 H B (1500 BYTES)
12
H M1 C (100 BYTES)
216
H M1 D (1500 BYTES)
218
CELL CONTROLLER
14
RF1 CC 802.11 A
104
RF1 CC 802.11 B1
106
RF1 CC 802.11 B2
108
RF1 CC 802.11 B3
110
12
CC RF1 802.11 C
208
CC RF1 802.11 D1
210
CC RF1 802.11 D2
212
CC RF1 802.11 D3
214
RF PORT
18
802.11 A
112
802.11 B1
114
802.11 B2
116
802.11 B3
118
802.11 C
200
802.11 D1
202
802.11 D2
204
802.11 D3
206
MU 1
20

FIG. 7

FIG. 8



210
BSS 1C
220
BSS 1B
240
230
BSS 1A
RF Port 1
250
Central Controller
260
RF Port 2
270
BSS 2C
280
BSS 2B
290
310
300
BSS 2A